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TO : Chief, Contracts Staff, DPD-DD/P

DATE: 22 March 1962

FROM : Chief, Administrative Staff, NPIC

SUBJECT: Contract for Special Resolution Test Films

REF : Itek Corp. (ITL) proposal 3343.01 dated 6 October 1961

1. It is requested that a contract be negotiated for four (4) sets of Special 70 MM, 5-Inch, and 9.5-Inch Resolution Test Films in accordance with Itek Corporation (ITL) proposal 3343.01 dated 6 October 1961. The four sets are for delivery to [redacted] Chief, TP&DS, NPIC.

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2. Based on the unit prices specified in the proposal [redacted] an obligation in the amount of [redacted] has been established against NPIC account 2155-1010-7000-740, Obligation Reference No. 11. It is requested that [redacted] be notified of the actual negotiated amounts. It is further requested that the aforementioned account number and obligation reference number be cited on all documents transferring expenditures incidental to this request to NPIC.

3. Your assistance in this matter will be appreciated.

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cc: [redacted]

DOCUMENT NO. 30  
NO CHANGE IN CLASS. ☒  
☐ DECLASSIFIED  
CLASS. CHANGED TO: TS S G  
NEXT REVIEW DATE: 2011  
AUTH: HR 70-2  
DATE: 13 July 81 REVIEWER: [redacted]

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*Encl #2*  
DPD 0361-62  
COPY 1 OF 3

ITEK LABORATORIES  
PROPOSAL FOR THE  
PREPARATION OF SPECIAL 70 MM, 5-INCH, AND 9.5-INCH  
RESOLUTION TEST FILMS  
(PROPOSAL 3343.01)

October 6, 1961

DOCUMENT NO. 31  
NO CHANGE IN CLASS. ☐  
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DATE: 13 July 81 REVIEWER:

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PROPOSAL FOR THE PREPARATION OF SPECIAL 70 MM, 5-INCH, AND 9.5-INCH  
RESOLUTION TEST FILMS--PROPOSAL 3343.01

I. Introduction

Itek Laboratories is pleased to submit the following quotation for the preparation of special resolving power test films. Such special materials have been produced for a number of applications, and special printers are available.

The Applied Photography Section of the Photography Department has, for some time, been engaged in the production of a wide variety of special target and reticle patterns, particularly on high-resolution film such as Eastman Kodak 649GH, or SO-105 film. All film targets are made from Bushnell master target.

II. Description of Proposed Test Films

A. The Test Target

The test target consists of a number of test objects. A test object is composed of two three-line squares, oriented at right angles. The line-to-width ratio is 5:1, with lines separated by a space equal to the line width. A complete target consists of a series of these test objects, the size decreasing according to the sixth-root-of-two. Thus, the resolution doubles for each six objects, and the target is numbered in groups of six objects each, with the largest group numbered -2, the next largest numbered -1, and so on through 0, 1, and up to 7. Any given object within a group is identified by the group number, followed by a dash and the object number within that group. In Table I, the resolution for the first object of each group is given, plus 7-6 (last object on the master target).

TABLE I

<u>Group</u>	<u>Object</u>	<u>Resolving Power (1/mm)</u>
-2	1	1/4
-1	1	1/2
0	1	1
1	1	2
2	1	4
3	1	8
4	1	16
5	1	36
6	1	64
7	1	123
7	6	228

## B. Target Contrast

In accordance with both the MILSSTD-150A and the tentative ASA Standard on Resolving Power of Photographic Materials, the high-contrast targets will have a density difference between line (light) and background (dark) of 2.0 or greater. The low-contrast target will have a density difference of 0.02 ± .02. 3

## C. Target Array

A target array is defined here as a number of targets, arranged over a specific area in a specific pattern. The array will be similar to the 13-target array described in MIL STD-150A, with one possible exception. The MIL STD array has those targets away from the center with their lines arranged radially and tangentially to the center. This configuration is specifically intended for lens testing. If, however, the test films are to be used for testing photographic contact printers, we strongly advise that the targets be arranged with lines parallel and perpendicular to the film direction. The analysis of results is considerably simplified with this arrangement. It will be necessary for the customer to specify the end use, or to specify which arrangement in the target he requires.

## D. The Composite Test Films

Each composite test film will contain alternate high- and low-contrast target arrays, with six feet of leader and trailer film. There will be five high-contrast and five low-contrast arrays on each film. All splices will be butt splices, with half-inch mylar tape (.001 inch thick).

### 1. 70 mm Test Film

Each array will cover 2-1/4 by 2-1/4 inches. Arrays will be spliced six inches on center. Each array will contain 13 targets, each with resolution ranging from 8 to 228 l/mm (group 3, object 1, to group 7, element 6). Total length of test film, including leader and trailer, will be about 17 feet.

### 2. 5-Inch Test Film

Similar to 1, except each array will cover a 4.5-by-4.5-inch format.

### 3. 9-1/2 Inch Test Film

Each array will cover a 9-by-9-inch format. Each array will be spliced 12 inches on center, with a total of three high-contrast and two low-contrast arrays. Total test film length will be 17 feet.

SEE [REDACTED] b-3  
TO EXHIBIT 6  
(COPY FILED THIS SECTION)

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### III. Auxiliary Data

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A report will accompany each roll, containing the resolution range for each target. An upper limit of [ ] will be maintained, clearly and sharply resolved. Because of the limitations of the original glass target, a line-to-space ratio of unity is not possible for the finest lines. However, every attempt will be made to hold this as close as possible to the original target quality. A photomicrograph of the original glass target master will be sent to the customer upon request.

The report will also state the density difference between line and background (contrast) as actually measured on each roll.

Although there may be occasional defects in the background, films will be rejected which contain defects that obstruct the resolution target detail.

### IV. Delivery

#### A. 70 mm

1. 10 each within 60 days of receipt of order
2. 48 each within 120 days of receipt of order

#### B. 5-inch

1. 10 each within 60 days of receipt of order
2. 48 each within 120 days of receipt of order

#### C. 9-1/2 inch

1. 10 each within 60 days of receipt of order
2. 48 each within 120 days of receipt of order

QUICK REACTION QUOTES

JOB TITLE AND QUANTITY

Preparation of Special 70mm, 5-Inch  
and 9 $\frac{1}{2}$ -Inch Resolution Test Films

B. 5-Inch Test Film

CUSTOMER Classified

PROJECT NO. 3343.01

DATE October 6, 1961

TOTAL SELLING PRICE

UNIT SELLING PRICE

10 Each	48 Each

Note: This job is only one portion of the entire proposal.

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QUICK REACTION QUOTES

JOB TITLE & QUANTITY

Preparation of Special 70mm, 5-Inch,  
and 9½-Inch Resolution Test Films

A. 70mm Test Film

CUSTOMER Classified

PROJECT NO. 3343.01

DATE October 6, 1961

TOTAL SELLING PRICE

UNIT SELLING PRICE

10 Each 48 Each

Note: This job is only a portion of the entire proposal

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QUICK REACTION QUOTES

JOB TITLE & QUANTITY

Preparation of Special 70mm, 5-inch,  
and 9½-inch Resolution Test Films

C. 9½-inch Test Film

CUSTOMER Classified

PROJECT NO. 3343.01

DATE October 6, 1961

TOTAL SELLING PRICE

UNIT SELLING PRICE

10 Each 1/8 Each

Note: This job is only one portion of the entire proposal

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